

Packing

The invention relates to a packing consisting of a sleeve provided with a cavity, and a cap that can be connected to the sleeve, wherein in the cavity of the sleeve a container especially consisting of plastic or glass is arranged, preferably for receiving liquid and/or viscous substances to be dispensed by a dispensing device.

From prior art a number of packings for containers are known consisting of plastic or glass, for receiving liquid and/or viscous substances to be dispensed by a dispensing device. The document EP 0 761 121 A2 for instance discloses such a packing which consists of two mutually connectible halves enclosing a cavity and having a circular cross section for example. One of the halves includes a nose which can be frictionally inserted in the second half for the connection of the two halves. In this pre-known packing it is provided that in at least one half a container made of plastic or glass is arranged for receiving liquids, and that this container can be detached from this half. This capability of being detached especially serves for separating the packing from the container in an easy manner. In this respect it is provided that the container is held in a cellulose strip that extends transversely to the longitudinal axis of the halves. Such a cellulose strip can be easily detached from the packing together with the container for the subsequent recycling or disposal of the mutually separate components, namely the packing on one side and the container on the other side.

Moreover, the document DE 203 00 322 U1 discloses a pin-type push-out sleeve for liquid containers which comprises a tubular sleeve member for receiving the liquid container, a rotary member and a slide that is supported for displacement within the sleeve member and movable in the longitudinal direction of the sleeve member by the rotary member and connected to the

liquid container. Finally, this push-out sleeve provides a cap for closing an opening of the sleeve member.

A device for withdrawing liquids, viscous substances or the like from an elastic container is additionally known from the document DE 33 14 780 A1. This device includes a hollow body, of which the interior space is connected to the interior of the container through openings, wherein the hollow body receives a movable piston, of which the spring-loaded lower part divides the interior of the hollow body in chambers, while regions of the upper part of the piston are arranged for displacement within a sleeve. The sleeve is in communication with one of the chambers through apertures and opens into a dispensing opening that can be closed by a valve head which is provided on the free end of the upper part of the piston.

Finally, from the document DE 42 19 310 A1 an elongated perfume dispenser is known. This perfume dispenser includes a scent container having a dispensing device arranged on one side thereof. Additionally, a cap is provided that covers at least the part of the dispensing device protruding from the scent container and comprises a clip which serves as an outwardly directed advertising surface and also for clamping the perfume dispenser.

Perfumes and other comparable samples of liquid or viscous body care products have been offered and distributed for a long time already in test tubes made of glass or plastic. These test tubes are normally attached to folded booklets made of cellulose, and these booklets have printed thereon both the manufacturer's and the product name and also the name of the dealer. Such samples are especially used for promotion. But the advertising effect is extremely limited because corresponding booklets with glass tubes signalise high quality and exclusiveness only to a limited extent, which in turn would be desirable for expensive perfumes. In addition, the perfume producers use

different glass or plastic tubes which are different from each other especially by their axial length and/or their diameter.

In view of this prior art the invention is based on the p r o b l e m of improving a packing of the aforementioned type for a container consisting of plastic or glass for receiving liquid and/or viscous substances to be dispensed by a dispensing device in such a way that the packing has a high-quality and high-class appearance and can be used in a flexible manner for a variety of different containers.

In a packing according to the present invention the s o l u t i o n of this problem provides that the container can be fixed in a receiving element in the region of the end of the sleeve opposing the cap, in a positive or non-positive manner.

Fixing the container in this way is sufficiently safe against the loss of the container on one side and on the other side allows a high-quality, high-class appearance of the packing which completely surrounds the container and provides for a sufficiently large advertising surface on the outside thereof.

According to a further development of the invention it is provided that the receiver comprises at least two diametrically oppositely arranged elastically deformable pressure pieces. By the deformability of the pressure pieces the receiver can receive containers of different outer dimension and especially a different outside diameter, so that the packing for the container is multifunctional with regard to its loading with different containers. Incidentally, containers having both a circular cross section and a square cross section or any other rectangular cross section can be inserted in the packing, wherein the container is frictionally supported in the packing through the pressure pieces.

A further development of this embodiment provides that three pressure pieces are arranged on a circle of an arc with equal distances to each other. This

embodiment is particularly suitable for containers having a circular cross section. Such containers are normally used for the above-mentioned purpose. The arrangement of three pressure pieces results in a better fixing of the container in the packing.

An alternative construction provides that the receiver includes a continuous pressure piece which has a recess in its central portion and which is elastically deformable at least in the region of walls of the recess. For instance, the pressure element can be formed in annular configuration so that the container to be fitted therein can be gripped around the entire circumferential surface.

According to a further feature of the invention it is provided that the receiver includes a cushion member in the bottom area. This cushion member is also elastically deformable in order to avoid damage of the container, especially of the one which is made of glass, when it hits the bottom surface of the sleeve.

The above-described fixing members in the receiver provide for a frictional connection between the container and the sleeve, wherein the container can be easily inserted in and removed from the sleeve. Alternatively, it can be provided that the container is fixed in the receiver by gluing. This embodiment offers the advantage that the container is connected to the sleeve or cap carrying advertisements in such a way that it cannot be detached from the packing without being destroyed. The advertising effect is considerably improved thereby.

A further embodiment provides that the container includes an external thread and the receiver a corresponding internal thread. This construction is characterized by a technically high-quality design and hence a design having a high-class appearance.

A further alternative is given by the fact that the sleeve and the container are formed as one piece. Both parts can be injection-moulded from a plastic material for example.

Preferably, above the receiver between an inner wall of the sleeve and an outer wall of the container spacers are arranged which especially centre the container within the sleeve. This construction has the advantage that a relative movement of the container to the sleeve is avoided also in the upper part, i.e. below the dispensing device, so that the handling of the sleeve with container inserted therein is especially easy when the receiver is provided with above-described elastically deformable pressure pieces.

The dispensing device is particularly formed as a spray head, a supported dispensing ball or as a permeable tissue allowing dispensing a desired amount of the liquid and/or viscous substance. Preferable, the dispensing device extends in the direction of the cap, so that the dispensing device is immediately accessible after removing the cap. This construction is self-explanatory concerning the use and handling thereof.

According to a further feature of the invention it is provided that the cap almost fully grips over the sleeve and that the sleeve has a finger rest which is not covered by the cap. If necessary, the finger rest may be corrugated, in order to facilitate pulling the cap out of the sleeve by increasing the coefficient of friction in the region of the outer surface of said rest portion.

Finally, it is provided that the sleeve has a shoulder, of which the outer diameter substantially corresponds to the outer diameter of the cap, so that the cap will contact the shoulder and form a smooth outer surface together with the shoulder.

Further features and advantages will become apparent from the following description of the attached drawing showing preferred embodiments of the invention. In the drawing it is shown by

- Figure 1 a first embodiment of a packing in a sectional side view;
- Figure 2 the packing according to figure 1 in a cross section along line II-II in figure 1 and
- Figure 3 a second embodiment of a packing according to the invention in a longitudinal section.

A packing as shown in the figures 1 to 3 consists of a sleeve 1 which includes a cavity 2 having arranged therein a container 3 made of plastic or glass for receiving liquid and/or viscous substances to be dispensed by a dispensing device 4. The sleeve 1 includes in its lower part a flat base 5 and is formed with a circular cross section. Moreover, the sleeve 1 includes a bottom surface 6 as well as a shoulder 7 that is arranged on the outside.

A cap 8 can be fitted to the sleeve 1, which cap closes the cavity 2. The cap 8 has a semi-spherical end 9.

In the following the embodiment according to the figures 1 and 2 will be described.

On the bottom surface 6 of the sleeve 1 a cushion member 10 made of a flexible, particularly elastically deformable material like a foamed material is arranged. On the inner wall 11 of the sleeve 1 in the lower part of the cavity 2 pressure pieces 1 are arranged which are formed of an elastically deformable material, for instance a foamed material, and which maintain the container 1 centred within the sleeve 1 in a form-fit fashion, while the container 3 rests on

the cushion member 10 by the bottom surface 13 thereof and under tension against the pressure pieces 12 by its outer shell 14.

According to figure 2 three pressure pieces 12 are provided in the sleeve 1 which are arranged equally spaced from each other on the inner wall 11 of the sleeve 1. The pressure pieces 12 have external surfaces 15 conforming the outer shell 14 of the container 3.

Supplementary it can be provided that in the region of the outer surfaces 15 of the pressure pieces 12 as well as to the cushion member 10 an adhesive layer is applied which additionally serves for fixing the container 3 within the sleeve 1.

Above the pressure pieces 12, namely on the upper end of the sleeve 1 and between the inner wall 11 of the sleeve 1 and the outer shell 14 of the container 3, spacers 16 are provided which additionally centre the container 3 within the sleeve 1. The spacers 16 can be formed in a web-like fashion. But it is also possible to merely provide an annular spacer 16 which then rests against the entire outer shell 14 of the container 3. The spacer 16 or the spacers 16 also consist of an elastically deformable material, for instance a foamed material or a rubber material. Incidentally, a corresponding rubber material can be used also for the pressure pieces 12 and/or the cushion member 10.

In the embodiment according to figure 3 it can be seen that the container 3 is formed as one piece with the sleeve 1. Accordingly, in this embodiment the pressure pieces 12 or the cushion member 10 and also the spacers 16 are not required. A bottom plate 17 restricts the volume of the container 3 to the container, so that liquid or viscous materials to be dispensed by the dispensing device 4 cannot reach those regions of the sleeve 1 which are out of reach for the dispensing device 4, so that the bottom plate 17 makes it possible for the container 3 to be completely emptied through the dispensing device 4.

The container 3 is positively and/or non-positively arranged within the sleeve 1 and can be accessed after removing the cap 8 from the sleeve 1. The cap 8 almost fully grips over the sleeve 1 and can be used as a presentation surface for advertising and/or for product description. Only a finger rest 18 of the sleeve 1 is not covered by the cap 8, so that withdrawing the sleeve 1 is more easily possible by gripping the finger rest 18 with one hand and the cap 8 with the other hand. In addition, the finger rest 18 may have a roughened or corrugated surface which facilitates the handling of the packing.

In the illustrated embodiments the outer diameter of the cap 8 corresponds to the outer diameter of the finger rest 18 of the sleeve 1.

The invention is not limited to the above-described embodiment. A variety of modifications are possible without departing from the scope of protection of the invention. The container can be formed for instance as a tube member which is open on one side for receiving solid objects like tooth sticks, tablets or the like. Moreover, the tube member can be provided with a cap. Furthermore, other forms of the receiver can be used, such as metal or plastic spring members. The receiver can also consist of a foamed material which is inserted in the cavity of the sleeve and completely fills this cavity, with said foamed material having a bore and/or incisions which are preferably arranged in a crosswise pattern where the container may be inserted under simultaneous compression of the foamed material. Alternatively, a self-curing plastic mass can be provided which for instance will cure upon contact with oxygen within a certain time interval, and the container can be inserted during this interval.

Also, the invention is not limited to the illustrated geometrical shape. In addition to a sleeve formed with a circular cross section the sleeve and accordingly also the cap can have a substantially oval cross section. But alternatively also square, hexagonal and octagonal cross-sectional shapes are conceivable for the sleeve and the cap.

The structural components of the packing can be made of a hard but flexible plastic material. But it is also possible to form a part of the structural components or all structural components of metal, especially light metal or a composite material. The same applies for the container which can be made of metal as well.